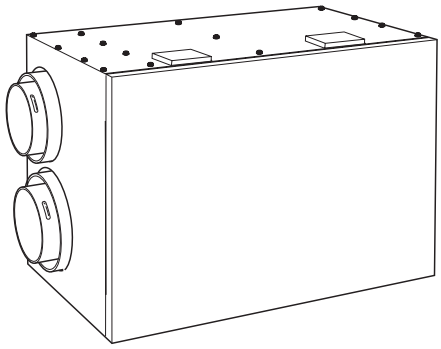
bryant
Heating & Cooling Systems

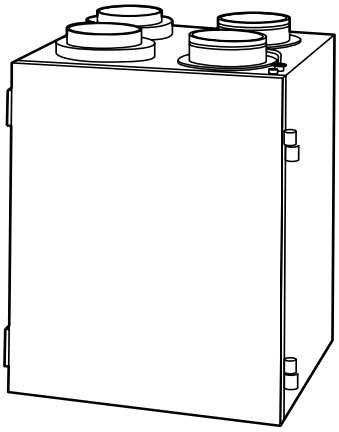
# SINGLE-PACKAGE ELECTRIC HEATING COOLING UNITS

# HRVBBLHU
# HRVBBSVC
# HRVBBLVU

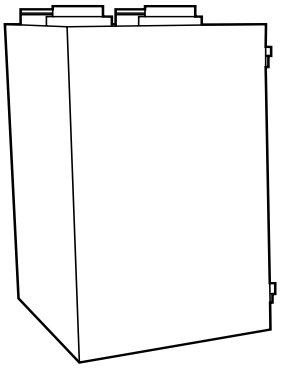
Heat Recovery Ventilators



**HRVBBLHU**



**HRVBBSVC**



**HRVBBLVU**

The Heat Recovery Ventilation (HRV) system offered by Bryant is the finest unit on the market today.
The HRVB provides efficient and cost-effective heat recovery during the heating season when needed most.

As temperatures drop below 23°F (–5°C), indoor air is recirculated periodically through the heat exchanger core to prevent frost from forming. Competitors' methods of supplementary electric defrost waste energy. Unlike rotary wheel heat exchangers which mix air streams, these cross flow or counterflow heat exchangers ensure that there is no mixing of the stale air stream with the fresh outdoor air stream.

A filter installed on the incoming outdoor air stream removes large airborne particles from the intake air stream before they enter the heat exchanger and reduces the maintenance required.

The units' acoustically engineered design makes them the quietest on the market and ensures that comfort is felt, not heard.

Unlatching 2 suitcase style latches allows easy removal of the filters and core for cleaning.

Note: The HRV should not be installed in an attic or unconditioned space unless provisions are made for drainline freezing and unit condensation.

## FEATURES

- Energy saving defrost cycle
- Cross flow, counterflow heat exchangers
- Two filters on incoming outdoor air stream to protect the HRV core
- Acoustical design
- No-tools maintenance
- Polypropylene heat exchanger core

# Model number nomenclature

**HRV** — Equipment Type:

Heat Recovery Ventilator

**BB** — Brand:

Bryant

**LHU** — Descriptor:

LHU — Large Horizontal Unit
SVU — Small Vertical Unit
LVU — Large Vertical Unit

**1** — Electrical Supply:

1 — 115 volts

**150** — Maximum Capacity (CFM)

150 CFM
200 CFM
250 CFM
330 CFM

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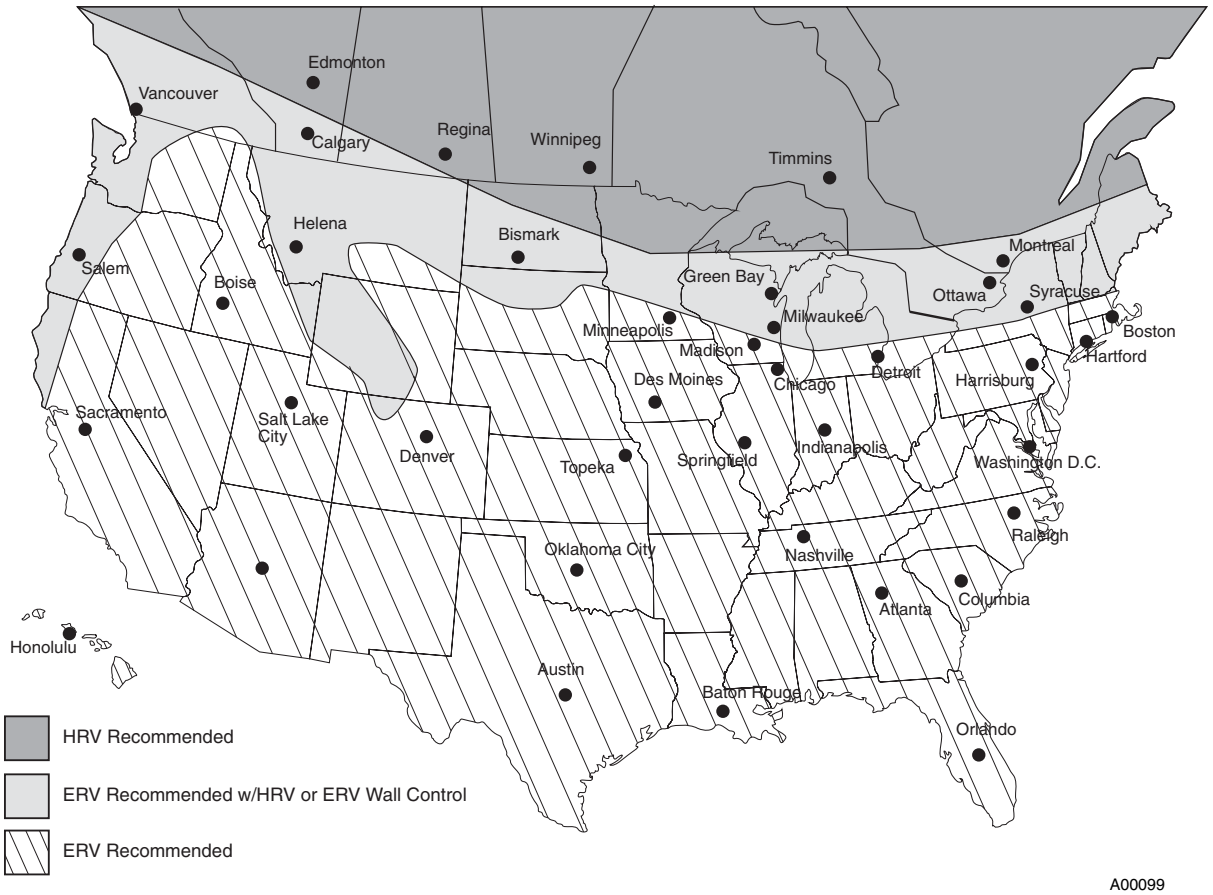
HOME VENTILATING INSTITUTE®
DIVISION OF AMCA

## Climate Map for Energy and Heat Recovery Ventilators

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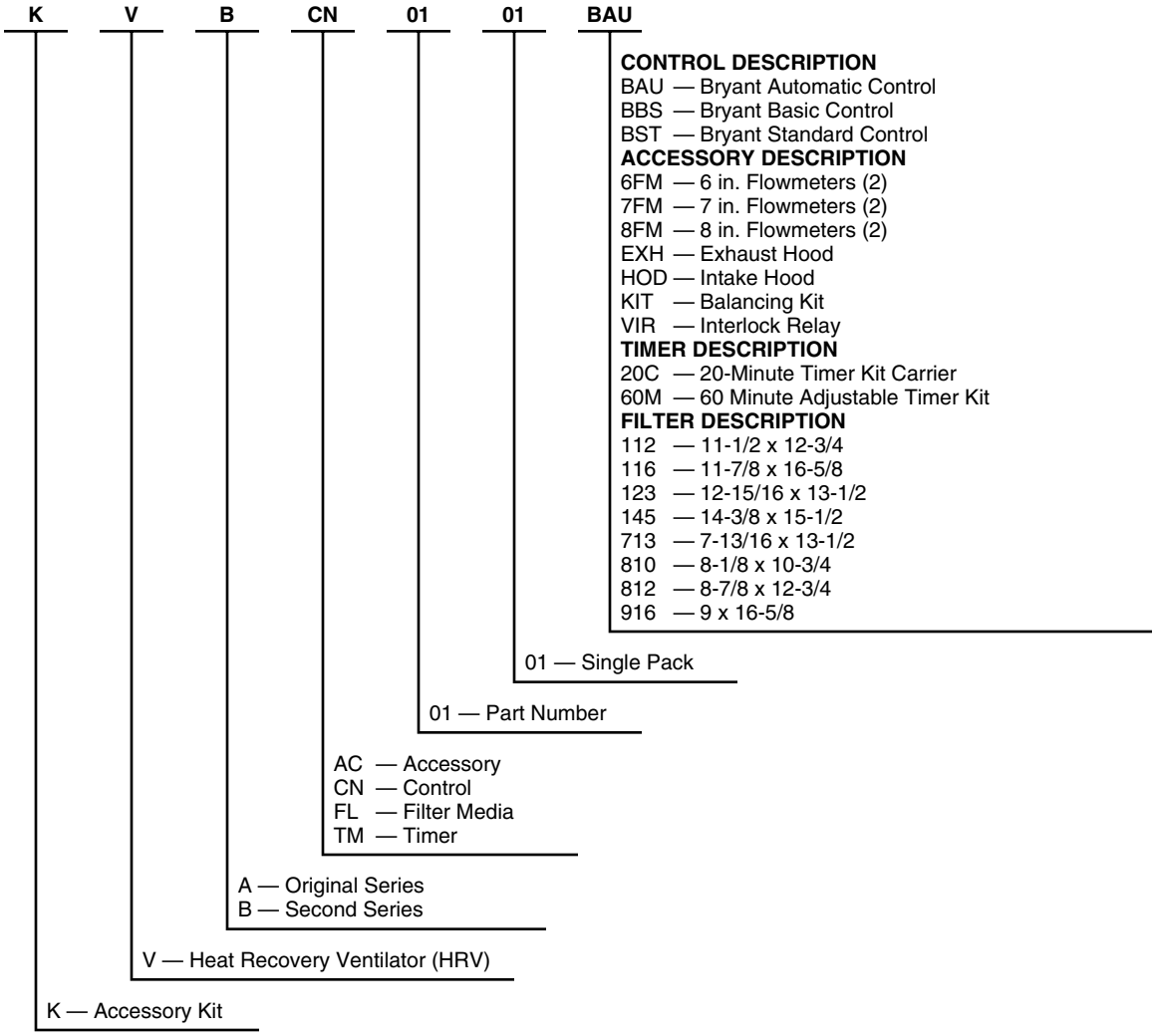
# Controls and accessories part no. nomenclature


K V B CN 01 01 BAU
CONTROL DESCRIPTION
BAU — Bryant Automatic Control
BBS — Bryant Basic Control
BST — Bryant Standard Control
ACCESSORY DESCRIPTION
6FM — 6 in. Flowmeters (2)
7FM — 7 in. Flowmeters (2)
8FM — 8 in. Flowmeters (2)
EXH — Exhaust Hood
HOD — Intake Hood
KIT — Balancing Kit
VIR — Interlock Relay
TIMER DESCRIPTION
20C — 20-Minute Timer Kit Carrier
60M — 60 Minute Adjustable Timer Kit
FILTER DESCRIPTION
112 — 11-1/2 x 12-3/4
116 — 11-7/8 x 16-5/8
123 — 12-15/16 x 13-1/2
145 — 14-3/8 x 15-1/2
713 — 7-13/16 x 13-1/2
810 — 8-1/8 x 10-3/4
812 — 8-7/8 x 12-3/4
916 — 9 x 16-5/8
01 — Single Pack
01 — Part Number
AC — Accessory
CN — Control
FL — Filter Media
TM — Timer
A — Original Series
B — Second Series
V — Heat Recovery Ventilator (HRV)
K — Accessory Kit

## ACCESSORIES

| Kit Number | Description | Where Used |
|---|---|---|
| **KVBCN0101CBS** | Basic HRV Control | Used with all HRVs |
| **KVBCN0101CST** | Standard HRV Control | Used with all HRVs |
| **KVBCN0101CAU** | Automatic HRV Control | HRVBLSVU, HRVBBLVU |
| **KVAAC0101VIR** | Interlock Relay | When combining an HRV with a Furnace or Fan Coil |
| **KVATM010120C** | 20 Minute Push Button Timer | Used with all HRVs when 20 minute manual operation is required |
| **KVATM010160M** | 60 Minute Timer | Used with all HRVs, time is adjustable between 10 and 60 minutes |
| **KVAAC0101HOD** | Exterior Intake and Exhaust Hood | 2 Required |
| **KVAAC0101KIT** | Start up Balancing Kit | Start up Balancing Kit, includes (2) 6 in. Flow Meter Collars & Magnehelic Gage |
| **KVAAC01016FM** | 6 in. Flow Meter Collar | At start up, when 6 in. duct work is connected to HRV |
| **KVAAC01017FM** | 7 in. Flow Meter Collar | At start up, when 7 in. duct work is connected to HRV |
| **KVAAC01018FM** | 8 in. Flow Meter Collar | At start up, when 8 in. duct work is connected to HRV |
| **KVAFK0101150** | Internal Filter | Used with HRVBBLHU 1150 Unit 11 3/4 x 12 7/8 x 3/4 (2) |
| **KVAFK0201200** | Internal Filter | Used with HRVBBLHU 1250 Unit 11 3/4 x 16 3/4 x 3/4 (2) |
| **KVAFL0101713** | Internal Filter | Used with HRVBBSVU 1150 Unit 7 13/16 x 13 1/2 (2) |
| **KVAFL0101123** | Internal Filter | Used with HRVBBSVU 1200 Unit 12 15/16 x 13 1/2 (2) |
| **KVAFL0101123** | Internal Filter | Used with HRVBBLVU 1200 Unit 12 15/16 x 13 1/2 (2) |
| **KVAFL0101145** | Internal Filter | Used with HRVBBLVU 1200 Unit 14 3/8 x 15 1/2 |
| **KVAFL0101810** | Internal Filter | Used with HRVBBLVU 1330 Unit 8 1/8 x 10 3/4 (1) |
| **KVAFL0101145** | Internal Filter | Used with HRVBBLVU 1330 Unit 14 3/8 x 15 1/2 (1) |
| **KVAFL0101810** | Internal Filter | Used with HRVBBLVU 1200 Unit 8 1/8 x 10 3/4 (1) |

## CONTROL FEATURES

**Basic Control:** Allows the user to manually set fan speed to low or high as required to maximize comfort.
**Standard Control:** Offers automatic dehumidistat control and the option to select continuous or intermittent fan operation. Setting the wall control to low will activate the continuous mode.
**Automatic Control:** In addition to the features found with standard control, this package offers a recirculation mode. These controls may only be used to operate stand-alone units with the defrost option which enables the recirculation feature.

| CONTROL DESCRIPTION | FAN SPEED CONTROL | DEHUMIDISTAT CONTROL | CONTINUOUS MODE* | INTERMITTENT MODE* | CIRCULATION MODE† |
|---|---|---|---|---|---|
| **Basic** | Yes | No | Yes | No | No |
| **Standard** | Yes | Yes | Yes | Yes | No |
| **Automatic‡** | Yes | Yes | Yes | Yes | Yes |

* Air exchange with outside.
† No air exchange with outside.
‡ Use only on units with defrost.

## CONTROL DESCRIPTION AND USAGE

**Fan Speed Control** — Enables user to modulate fan speed from low to high air exchange with outside.
**Dehumidistat Control** — Allows the user to select the relative humidity level at which the unit would change fan speed for dehumidification in the winter months.
**Continuous Mode** — If the relative humidity inside the building is lower than selected, air exchange occurs with the outside at low speed. If the relative humidity inside the house is higher than selected, air exchange occurs with the outside at high speed. Ensures continuous air exchange for constant air quality.
**Intermittent Mode** — If the relative humidity inside the building is lower than selected, no air exchange occurs and the system turns off. If the relative humidity inside the house is higher than selected, air exchange occurs with the outside at high speed. Ensures minimum air exchange level when the building is unoccupied to minimize operating costs.
**Circulation Mode** — If the relative humidity inside the building is lower than selected, the ambient air would be circulated and filtered at high speed. If the relative humidity inside the house is higher than selected, air exchange would occur with the outside at high speed. Ensures continuous movement and filtration of air for maximum comfort. Available with automatic control only.

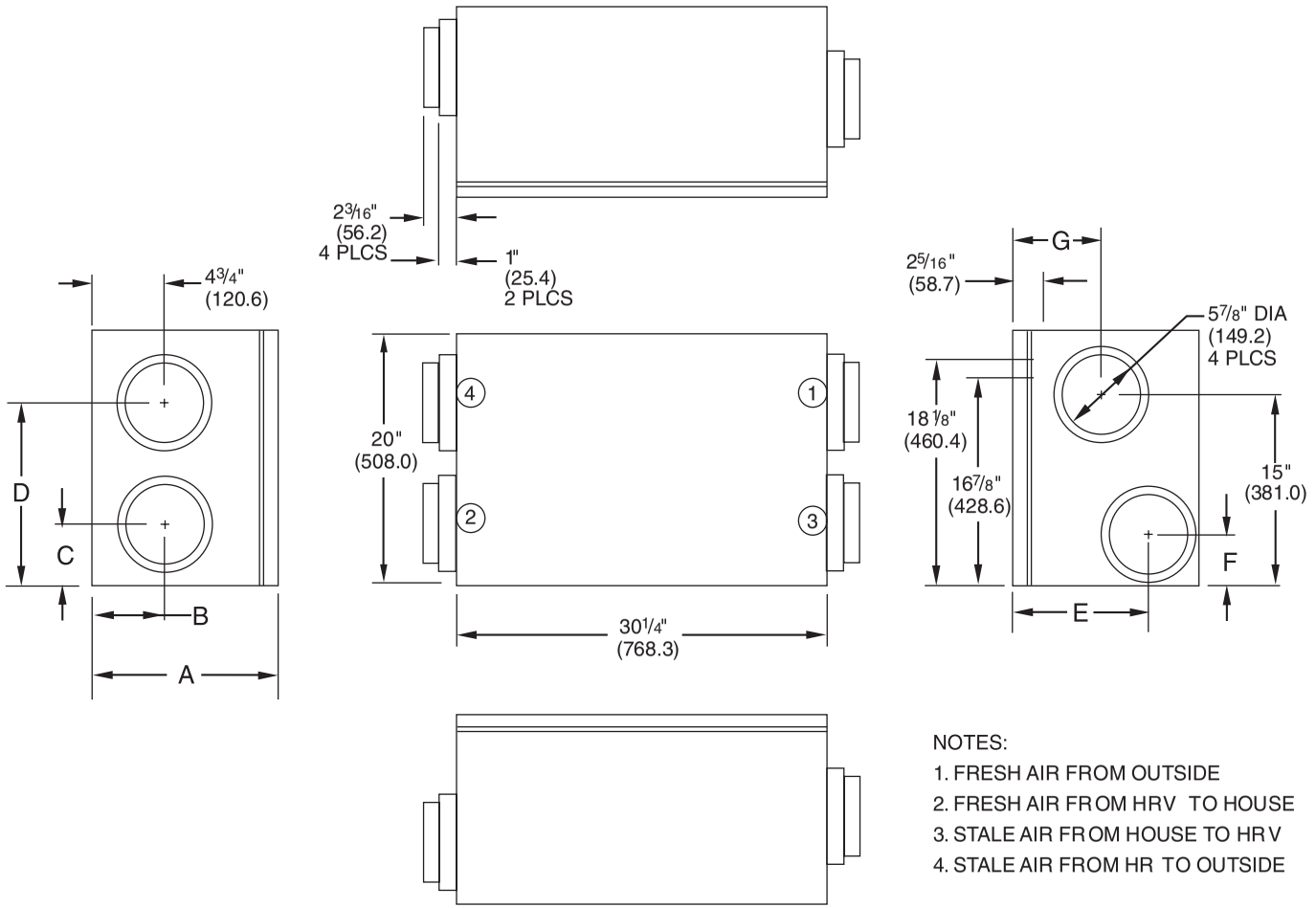
## AUTOMATIC DEFROST CYCLE FEATURES

All models offer a non-electric defrost cycle feature which prevents frost and ice buildup within the heat recovery core. When the outside air temperature falls below 23°F (–5°C) it is electronically sensed and the dampers close the outside air ports. This allows warm indoor air to recirculate within the heat recovery core. The frequency of this cycle increases as the outside air temperature decreases.

| | 23°F TO 55°F (–5°C TO –15°C) | | 4°F TO –17°F (–15.6°C TO –27.3°C) | | BELOW –18°F (–27.8°C) | |
|---|---|---|---|---|---|---|
| MODEL | DEFROST* | EXCHANGE† | DEFROST* | EXCHANGE† | DEFROST* | EXCHANGE† |
| **HRVBBLHU** | 6 Minutes | 60 Minutes | 6 Minutes | 32 Minutes | 6 Minutes | 20 Minutes |
| **HRVBBSVU** | 6 Minutes | 60 Minutes | 6 Minutes | 32 Minutes | 6 Minutes | 20 Minutes |
| **HRVBBLVU** | 6 Minutes | 60 Minutes | 6 Minutes | 32 Minutes | 6 Minutes | 20 Minutes |

* All defrost times are in the standard mode (as shipped)
† Time between defrost when within specified temperature range

# DIMENSIONS




NOTES:
1. FRESH AIR FROM OUTSIDE
2. FRESH AIR FROM HRV TO HOUSE
3. STALE AIR FROM HOUSE TO HRV
4. STALE AIR FROM HRV TO OUTSIDE

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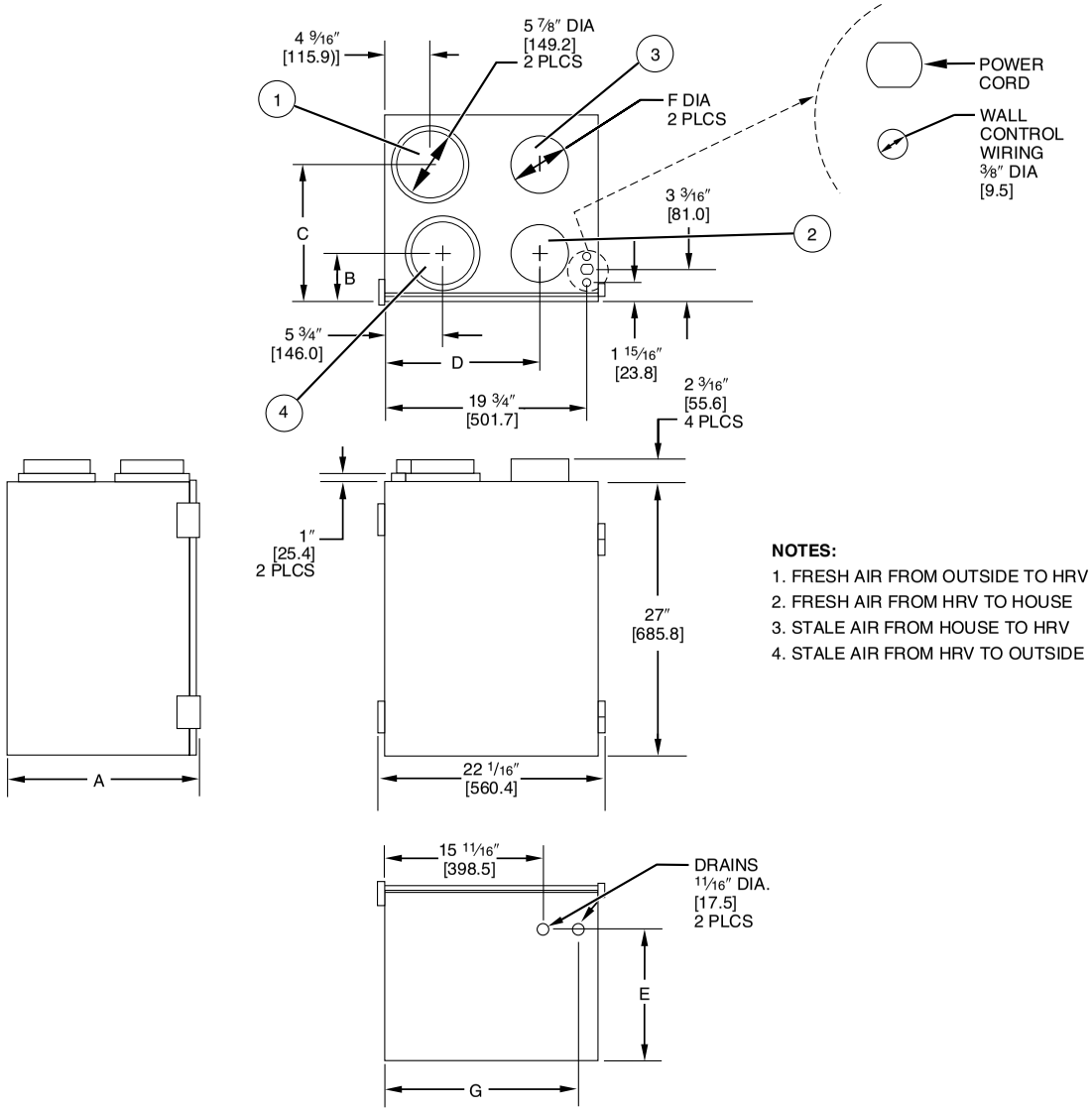
| MODEL NO. | A | | B | | C | | D | | E | | F | | G | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| HRVBBLHU1150 | 15-1/8 | 384.2 | 4-1/16 | 104 | 5/58 | 143.3 | 14-1/2 | 368.9 | 10-3/8 | 288.9 | 4-3/8 | 111.3 | 7-3/4 | 196.9 |
| HRVBBLHU1250 | 19 | 483 | 5-13/16 | 147.7 | 5-1/16 | 128.1 | 14-1/2 | 368.9 | 11-3/16 | 283.9 | 4-3/8 | 111.3 | 10-1/16 | 255.6 |

# DIMENSIONS (continued)

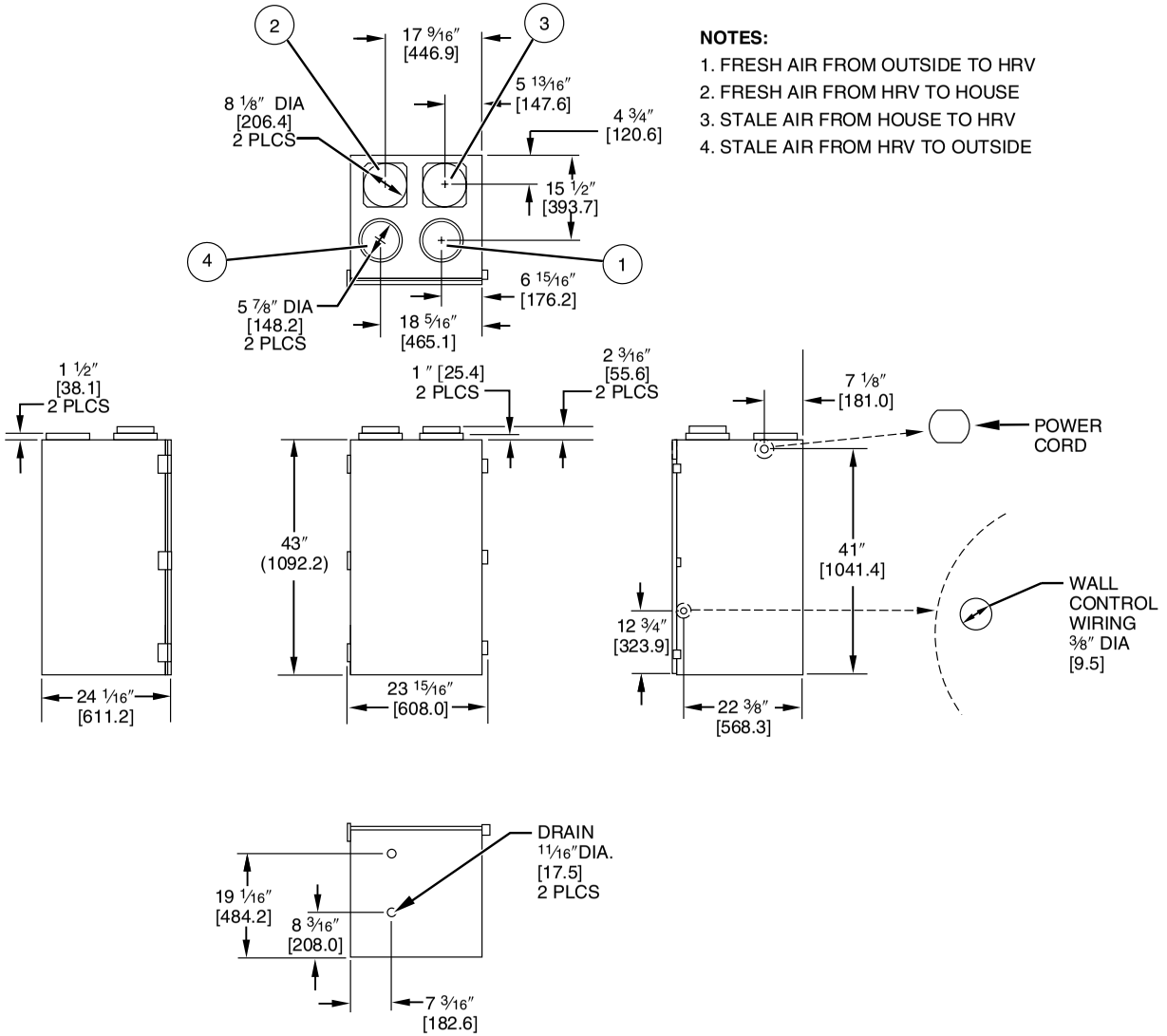



**NOTES:**

1. FRESH AIR FROM OUTSIDE TO HRV
2. FRESH AIR FROM HRV TO HOUSE
3. STALE AIR FROM HOUSE TO HRV
4. STALE AIR FROM HRV TO OUTSIDE

| MODEL NO. | A | | B | | C | | D | | E | | F | | G | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| **HRVBBSVU1150** | 18-1/2 | 469.9 | 4-11/16 | 119.1 | 13-5/16 | 388.2 | 15-7/16 | 392.1 | 13-9/16 | 344.5 | 5-7/8 | 149.2 | 19-15/16 | 506.2 |
| **HRVBBSVU1200** | 24-1/2 | 622.2 | 8-3/16 | 208.0 | 19-5/16 | 490.6 | 14-9/16 | 369.9 | 16-15/16 | 430.2 | 6-7/8 | 174.6 | 19-15/16 | 506.2 |

# DIMENSIONS (continued)




**NOTES:**

1. FRESH AIR FROM OUTSIDE TO HRV
2. FRESH AIR FROM HRV TO HOUSE
3. STALE AIR FROM HOUSE TO HRV
4. STALE AIR FROM HRV TO OUTSIDE

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## HRVBBLVU1200 or HRVBBLVU1330

## PHYSICAL DATA

| MODEL DESCRIPTION | CONVENTIONAL | | COMPACT | | HIGH EFFICIENCY | | |
|---|---|---|---|---|---|---|---|
| **Model No.** | HRVBBVHU1150 | HRVBBVHU1260 | HRVBBSVC1150 | HRVBBSVC1200 | HRUBBLVU1150 | HRUBBLVU1200 | HRUBBLVU1330 |
| **Port Locations** | Sides | Sides | Top | Top | Top | Top | Top |
| **Core Type** | Polypropylene Cross Flow | Polypropylene Cross Flow | Polypropylene Cross Flow | Polypropylene Cross Flow | Polypropylene Cross Flow | Polypropylene Counterflow | Polypropylene Counterflow |
| **Weight — lb (kg)** | 65 (29.5) | 73 (33.2) | 60 (27) | 80 (36.3) | 80 (36.3) | 120 (54.5) | 120 (54.5) |
| **Shipping Weight — lb (kg)** | 75 (34) | 83 (37.6) | 75 (34) | 89 (40.4) | 89 (40.4) | 143 (64.9) | 143 (64.9) |
| **Shipping Dimensions (in.)** | | | | | | | |
| **Height** | 23 1/16 | 22 15/16 | 31.5 | 31.5 | 31.5 | 47.5 | 47.5 |
| **Width** | 36 1/16 | 35 1/16 | 23.25 | 23.25 | 23.25 | 26.0 | 26.0 |
| **Depth** | 17 13/16 | 22 5/16 | 26.00 | 26.00 | 26.00 | 26.0 | 26.0 |

## PERFORMANCE DATA

| MODEL DESCRIPTION | CONVENTIONAL | | COMPACT | | HIGH EFFICIENCY | | |
|---|---|---|---|---|---|---|---|
| **Model No.** | HRVBBLHU1150 | HRVBBLHU1250 | HRVBBSVC1150 | HRVBBSVC1200 | HRVBBLVU1150 | HRVBBLVU1200 | HRVBBLVU1330 |
| **Capacity — CFM @ 0.5–0.3ESP (in. wc)** | 130–168 | 191–210 | 106–150 | 177–211 | 123–141 | 189–209 | 300–334 |
| **Efficiency (Sensible) — percent** | | | | | | | |
| **32°F (0°C)** | 65 | 65 | 69 | 77 | 81 | 84 | 80 |
| **–13°F (–25°C)** | 65 | 60 | 60 | 67 | 69 | 72 | 74 |
| **Efficiency (Latent) — percent** | | | | | | | |
| **@ all temperatures** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Heat Core Exchange Area — cu ft (cu m)** | 120<br>3.4 | 166<br>4.7 | 90<br>8.4 | 144<br>13.3 | 144<br>13.3 | 210<br>19.5 | 210<br>19.5 |

## ELECTRICAL DATA

| | CONVENTIONAL | | COMPACT | | HIGH EFFICIENCY | | |
|---|---|---|---|---|---|---|---|
| **Model** | HRVBBLHU1150 | HRVBBLHU1250 | HRVBBSVC1150 | HRVBBSVC1200 | HRVBBLVU1150 | HRVBBLVU1200 | HRVBBLVU1330 |
| **Voltage** | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| **Max Power — watts** | 150 | 218 | 115 | 195 | 115 | 250 | 500 |
| **Max Amps** | 1.4 | 1.9 | 1.2 | 1.8 | 1.2 | 2.2 | 5.4 |

## METHODS TO SIZE HRV'S

**METHOD 1**

1. Calculate cu ft of occupied space.
2. Multiply by recommended air changes per hr (AC/h).
3. Divide by 60 minutes per hr to convert to CFM.

**EXAMPLE:** 2000 sq ft with 8 ft ceiling
0.35 air changes per hr (AC/h)

(2000 sq ft x 8 ft ceiling x 0.35 AC/h) / 60 min/h = 93.3 CFM

**METHOD 2**

1. Multiply number of people times 15 CFM/person.
2. Multiply number of bath rooms 20 CFM/each.
3. Add 25 CFM for kitchen.

**EXAMPLE:** 2 people
2 baths
1 kitchen

(2 x 15) + (2 x 20) + 25 = 95 CFM

### ADDITIONAL HEATING AND COOLING LOAD CHARTS

Although the ventilators process the outside air before it enters the home, additional heating and cooling loads need to be considered.

## HEATING LOAD BTU

| Outside Temp °F | Heat Load (Btuh) @ Inside Design Temp 72°F | | | | | | |
|---|---|---|---|---|---|---|---|
| | HRVBBLHU1150 | HRVBBSVC1250 | HRVBBSVC1150 | HRVBBSVC1200 | HRVBBLVU1150 | HRVBBLVU1200 | HRVBBLVU1330 |
| **–25** | 4,688 | 8,165 | 6,970 | 7,690 | 5,500 | 6,650 | 9,990 |
| **–20** | 4,466 | 7,744 | 6,470 | 7,090 | 5,030 | 6,070 | 9,310 |
| **–15** | 4,598 | 8,008 | 5,990 | 6,520 | 4,590 | 5,510 | 8,650 |
| **–10** | 4,334 | 7,547 | 5,520 | 5,970 | 4,160 | 4,970 | 8,000 |
| **–5** | 4,069 | 7,087 | 5,070 | 5,440 | 3,750 | 4,470 | 7,380 |
| **0** | 3,805 | 6,627 | 4,550 | 4,840 | 3,300 | 3,910 | 6,640 |
| **5** | 3,541 | 6,167 | 4,130 | 4,360 | 2,940 | 3,470 | 6,060 |
| **10** | 3,502 | 6,100 | 3,730 | 3,900 | 2,600 | 3,050 | 5,500 |
| **15** | 3,220 | 5,608 | 3,290 | 3,400 | 2,240 | 2,600 | 4,870 |
| **20** | 2,938 | 5,116 | 2,930 | 3,000 | 1,940 | 2,240 | 4,350 |
| **25** | 2,950 | 5,138 | 2,580 | 2,610 | 1,670 | 1,910 | 3,850 |
| **30** | 2,636 | 4,591 | 2,240 | 2,250 | 1,410 | 1,600 | 3,370 |
| **35** | 2,322 | 4,045 | 1,900 | 1,880 | 1,160 | 1,300 | 2,870 |
| **40** | 2,009 | 3,498 | 1,600 | 1,560 | 940 | 1,040 | 2,430 |

The heating load chart shows the heating loads in Btuh for a range of winter design temperatures for each model of ventilator.

**EXAMPLE:** The heating design temperature for Milwaukee, WI is –4°F. At –5°F, the additional heating load of the HRVBBLHU1250 is 8417 Btuh. This additional load should be taken into consideration when sizing the heating equipment.

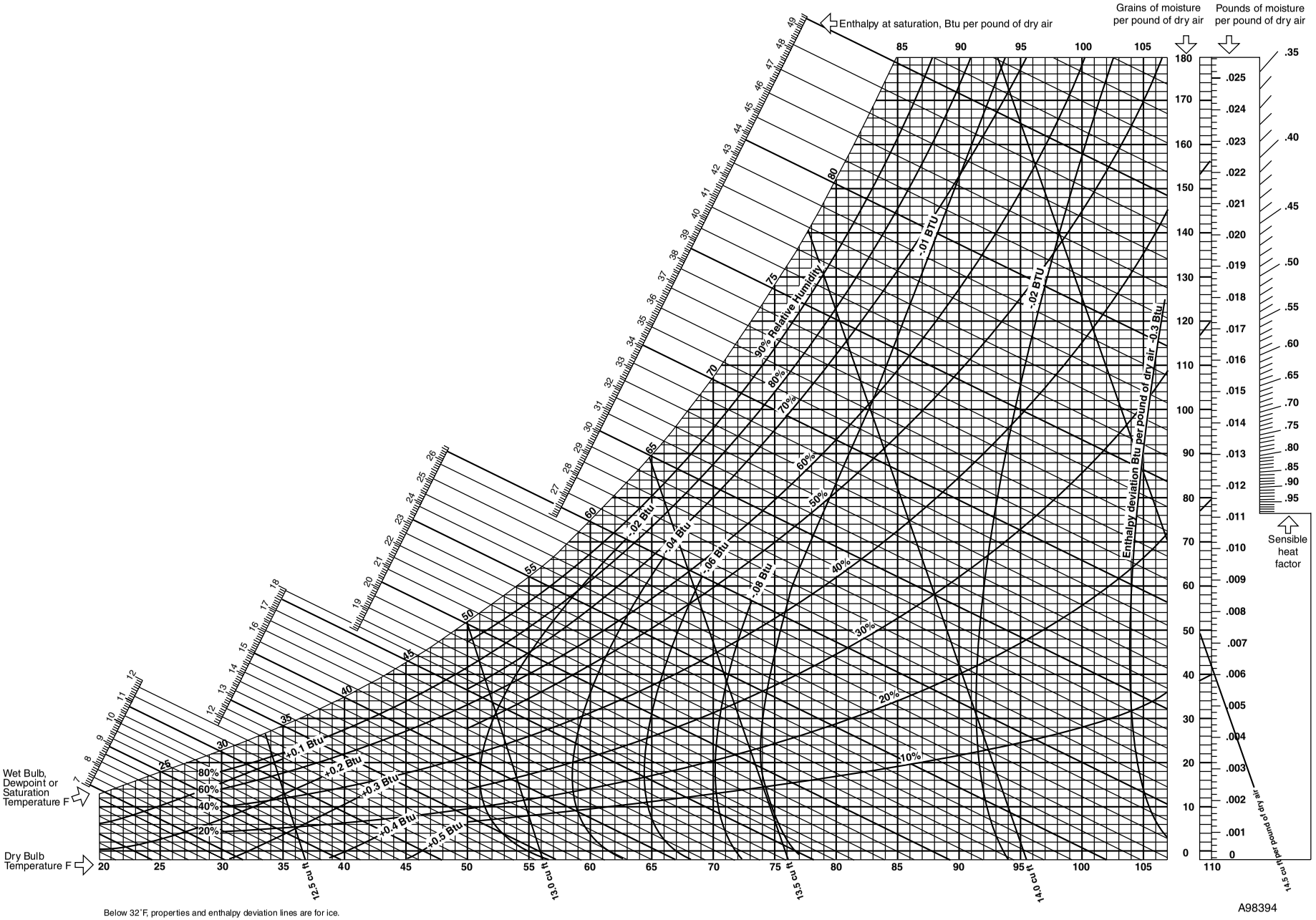
## COOLING LOAD BTU

| Outside Enthalpy Btu/lb | Cooling Load (Btuh) @ Inside Design Temp 75°F and 50% Relative Humidity | | | | | | |
|---|---|---|---|---|---|---|---|
| | HRVBBLHU1150 | HRVBBLHU1250 | HRVBBSVC1150 | HRVBBSVC1200 | HRVBBLVU1150 | HRVBBLVU1200 | HRVBBLVU1330 |
| **30** | 670 | 1,071 | 780 | 990 | 770 | 990 | 1,390 |
| **31** | 1,090 | 1,741 | 1,300 | 1,650 | 1,290 | 1,650 | 2,310 |
| **32** | 1,509 | 2,411 | 1,820 | 2,310 | 1,800 | 2,310 | 3,240 |
| **33** | 1,928 | 3,080 | 2,340 | 2,970 | 2,310 | 2,970 | 4,170 |
| **34** | 2,347 | 3,750 | 2,860 | 3,630 | 2,830 | 3,630 | 5,090 |
| **35** | 2,766 | 4,419 | 3,380 | 4,290 | 3,340 | 4,290 | 6,020 |
| **36** | 3,185 | 5,089 | 3,910 | 4,950 | 3,860 | 4,950 | 6,940 |
| **37** | 3,604 | 5,759 | 4,430 | 5,610 | 4,370 | 5,610 | 7,870 |
| **38** | 4,023 | 6,428 | 4,950 | 6,270 | 4,890 | 6,270 | 8,790 |
| **39** | 4,442 | 7,098 | 5,470 | 6,930 | 5,400 | 6,930 | 9,720 |
| **40** | 4,861 | 7,767 | 5,990 | 7,590 | 5,910 | 7,590 | 10,650 |
| **41** | 5,280 | 8,437 | 6,510 | 8,250 | 6,430 | 8,250 | 11,570 |
| **42** | 5,699 | 9,107 | 7,030 | 8,910 | 6,940 | 8,910 | 12,500 |

The cooling load chart shows loads in Btuh. To use the cooling load chart, first find the design enthalpy from a psychrometric chart using the design dry bulb and wet bulb temperatures. (See psychrometric chart on p. 11.) The cooling load can then be found for a range of enthalpies for each ventilator.

**EXAMPLE:** The cooling design dry bulb temperature for Milwaukee, WI is 87°F and the average wet bulb at that temperature is 73°F. On the psychrometric chart the enthalpy is about 37.7 Btu/lb of dry air which will round up to 38 Btu/lb of dry air. In the left column, at 38 Btu/lb the HRVBBLHU1250 would have an additional cooling load of 6428 Btuh. This additional load should be taken into account when sizing the air cooling equipment.

# PSYCHROMETRIC CHART




Below 32°F, properties and enthalpy deviation lines are for ice.

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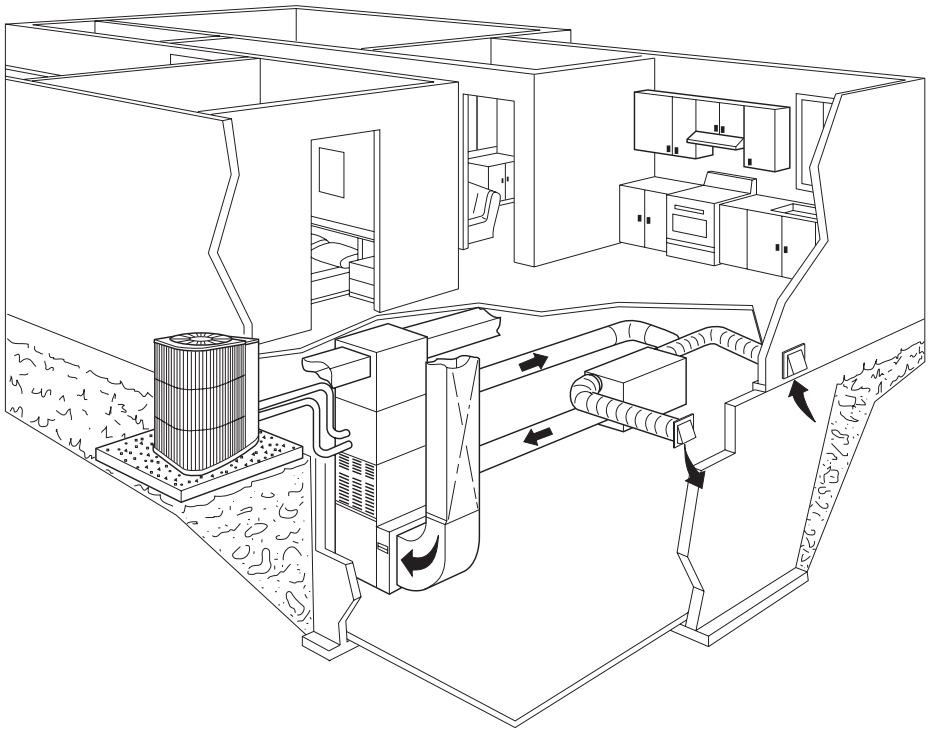
## HRV INSTALLED WITH FORCED AIR SYSTEM



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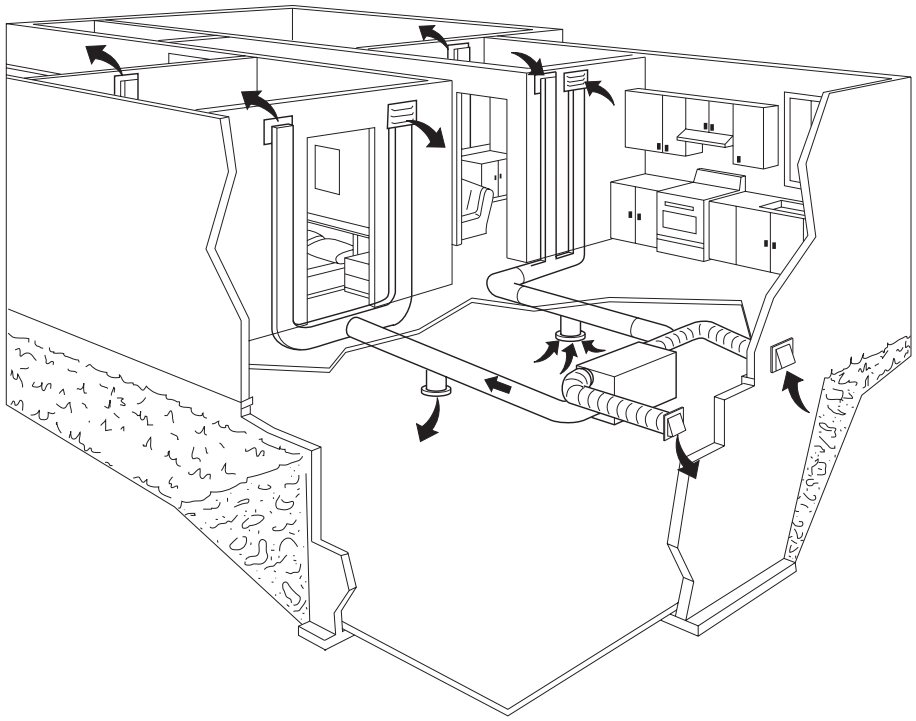
## HRV INSTALLED WITH INDEPENDENT AIR DISTRIBUTION



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bryant®
Heating & Cooling Systems

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS

Cancels: PDS HRV.71.1

Form/Catalog No. PDS HRV.71.2

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